What Is Claimed Is

1. An improved cartridge primer having a quantity of inorganic reactive material therein for producing a limited-life thereof.

2. The improved cartridge primer of Claim 1, wherein said inorganic reactive material is in the form of a multilayer material.

3. The improved cartridge primer of Claim 1, wherein said inorganic reactive material is in the form of a powder.

4. The improved cartridge primer of Claim 3, wherein said powder is formed from a multilayer material.

5. The improved cartridge primer of Claim 1, wherein said inorganic reactive material is in the form of a multilayer material pre-form including a foil base.

6. The improved cartridge primer of Claim 2, wherein the limited-life is accomplished by an explosive containing said inorganic reactive materials which are constructed to produce time-dependent interdiffusion of the composition of the inorganic materials.

7. The improved cartridge primer of Claim 2, wherein the limited life is accomplished by an addition of a quantity of material that has a change at low

temperature selected from the group consisting of a destructive phase change, a thermal contraction change, and an internal stress change.

8. The improved cartridge primer of Claim 1, wherein an extension of the limited-life by storing at low temperature is prevented by an addition of material that has a destructive phase change at low temperatures.

9. The improved cartridge primer of Claim 1, wherein an extension of the limited-life by storing at low temperature is prevented by an addition of material that has a destructive thermal contraction change at low temperatures.

10. The improved cartridge primer of Claim 1, wherein an extension of the limited-life by storing at low temperature is prevented by an addition of material that has a destructive internal stress change at low temperature.

11. An ammunition consisting of a cartridge case, cartridge primer, propellant, and projectile, the improvement comprising:

said cartridge primer being a limited-life cartridge primer constructed of inorganic reactive materials.

12. The improved cartridge primer of Claim 11, wherein said inorganic reactive materials are selected from the group consisting of: two material multilayers and three material multilayers.

13. The improved cartridge primer of Claim 11, additionally including a quantity of material that has at low temperature one of: a destructive phase change, a thermal contraction change, and an internal stress change.

14. The improved cartridge primer of Claim 12, wherein said inorganic reactive materials are composed of two material multilayers having alternating layers.

15. The improved cartridge primer of Claim 14, wherein said alternating layers are selected from the group consisting of Ti-B, Zr-B, Ta-B, Nb-B, B-C, Al-C, Hf-C, Ti-C, Ta-C, Si-C, Ni-Al, Ti-Al, Li-B, Li-Al, and Ni-Ti.

16. The improved cartridge primer of Claim 13, wherein said quantity of material is composed of tin.

17. A process for producing limited-time cartridge primers, including:

forming an explosive for a cartridge primer from a quantity of inorganic reactive material having time-dependent interdiffusion of elements which reduces stored energy and reactivity thereby producing a limited-life of the explosive.

18. The process of Claim 17, additionally including providing a quantity of tin in the inorganic reactive material.

19. The process of Claim 17, wherein forming the explosive from a quantity of inorganic reactive material is carried out by forming a multilayer of the inorganic reactive material.

20. The process of Claim 19, wherein forming the multilayer is carried out by forming alternating layers of inorganic reactive material, wherein the interdiffusion of elements occurs at interfaces of the multilayer material.

21. The process of Claim 17, wherein the inorganic reactive material is formed as a powder.

22. The process of Claim 21, wherein the powder is produced by forming a highly stressed multilayer of inorganic reacting elements that disintegrate into a powder.

23. The process of Claim 17, wherein forming the explosive of the inorganic reactive material is carried out by forming the material on a foil, and then cutting quantities of selected sizes from the foil and reactive material.

24. The process of Claim 23, additionally including forming a film of tin on the foil before cutting into selected sizes.

25. The process of Claim 17, additionally including depositing the inorganic reactive material in multilayers on a foil composed of materials selected from the group consisting of aluminum, nickel, and copper.

26. The process of Claim 17, wherein the inorganic reactive material is deposited in multilayers of three different materials.

27. The process of Claim 17, wherein the inorganic reactive material is deposited in a multilayer of alternating layers of two different materials.

28. The process of Claim 17, additionally including using the thus formed multilayer to initiate a chemical explosive.

29. The process of Claim 28, additionally including igniting the multilayer electronically by a low-voltage spark.

30. An ammunition including a primary initiator having a limited functional life-time.

31. The ammunition of Claim 30, wherein said primary initiator includes inorganic reactive material.

32. The ammunition of Claim 30, wherein said primary initiator additionally includes a quantity of tin.

33. The ammunition of Claim 30, wherein said primary initiator includes a material having changes at low temperature selected from the group consisting of a destructive phase change, a thermal contraction change, and a internal stress change.

34. The ammunition of Claim 33, wherein said material is composed of pure tin.

35. The ammunition of Claim 31, wherein said inorganic reactive material is composed of a reactive material multilayer selected from the group consisting of two materials and three materials.

36. The ammunition of Claim 35, wherein said reactive material multilayer is composed of alternating layers of two materials, selected from the group consisting of Ti-B, Zr-B, Ta-B, Nb-B, Al-C, Ti-C, Hf-C, Ta-C, Si-C, Ni-Al, Li-B, Li-Al, and Ni-Ti.

37. The ammunition of Claim 35, wherein said alternating layers are deposited on a foil composed of materials selected from the group of aluminum, nickel, and copper.

38. The ammunition of Claim 37, wherein said foil containing said deposited alternating layers is converted to pre-forms containing sections of said foil and said deposited alternating layers of reactive materials.

39. The ammunition of Claim 35, wherein said multilayer is highly stressed so as to disintegrate to a powder of inorganic reactive material.

40. The ammunition of Claim 35, wherein said reactive material multilayer is composed of layers of three materials, selected from the group consisting of Ti-Al-CuO, Ti-C-CuO, Be-C-CuO, and Al-C-CuO.

41. The ammunition of Claim 40, wherein said multilayer is converted to a powder of reactive material.

42. The ammunition of Claim 30, wherein said primary initiator is activated electrically.

43. The ammunition of Claim 30, wherein said primary initiator includes a quantity of a chemical explosive and an inorganic reactive multilayer material.

44. The ammunition of Claim 31, wherein said primary initiator additionally includes a quantity of pure tin.

45. The ammunition of Claim 30, wherein said primary initiator comprises: a first cup-like member, a second cup-like member, said first and second cup-like members being positioned in inverted relationship, an insulator positioned intermediate adjacent wall sections of said cup-like members, one of said cup-like members containing a quantity of chemical explosive material, and an inorganic reactive multilayer located adjacent a bottom section of another of said cup-like members.

46. The ammunition of Claim 38, wherein said primer initiator additionally includes a quantity of tin in one of said cup-like members.

47. A detonator for explosives including a primary initiator charge having a limited functional life-time.

48. The detonator of Claim 47, wherein said primary initiator includes a reactive material multilayer selected from the group consisting of two elements and three elements.

49. The detonator of Claim 48, additionally including means for activating said primary initiator electrically.

50. The detonator of Claim 49, additionally including a quantity of chemical explosive.

51. The detonator of Claim 47, additionally including a quantity of tin.

52. The detonator of Claim 47, wherein extension of the limited function life-time by storing at low temperatures is prevented by the addition of a quantity of material that has changes therein at low temperature including at least one of: a destructive phase change, a thermal contraction change, and an internal stress change.

53. The improved cartridge primer of Claim 2, wherein said organic reactive material is activated electrically.

54. The process of Claim 19, wherein forming a multilayer of the inorganic reactive material is carried out by depositing alternating layers of

material selected from the group consisting of Ti-B, Zr-B, Ta-B, Nb-B, B-C, AL-C, Hf-C, Ti-C, Ta-C, Si-C, Ni-Al, Ti-Al, Li-B, Li-Al, and Ni-Ti.

55. The process of Claim 54, wherein the depositing of the alternate layers of material is carried out by magnetron sputtering.

56. The process of Claim 17, additionally including forming a multilayer of the inorganic reactive material which is carried out by depositing layers of three materials selected from the group consisting of Ti-Al-CuO, Ti-C-CuO, Be-C-CuO, and Al-C-CuO.

57. The process of Claim 56, wherein the depositing of the inorganic reactive material is carried out by magnetron sputtering.

58. The process of Claim 17, additionally including forming a multilayer of the inorganic reactive material which is carried out by depositing sequential layers of Ti, C, CuO, Cu, Ti, C, CuO, Cu, etc.

59. The process of Claim 17 additionally including forming a multilayer of the inorganic reactive materials which is carried by depositing a multilayer structure having metal-carbon-oxide combinations.

60. The process of Claim 59, wherein the metal-carbon-oxide combinations are selected from the group consisting of Al-C-CuO, Be-C-CuO, and Ti-Al-CuO.

61. The process of Claim 17, additionally includes forming a layer of tin, and then forming the multilayer of the inorganic reactive material on the layer of tin.

62. The process of Claim 61, wherein the multilayer of inorganic reactive material is composed of alternating layers of Ti and B.

63. The process of Claim 61, wherein the layer of tin is formed in cup portion of a primer assembly, and the multilayer is formed on the layer of tin.

64. A process for producing limited-time cartridge primers, consisting essentially of:

forming a layer of tin, and

forming an explosive on the layer of tin composed of a multilayer of alternating layers of Ti and B to form a limited-time cartridge primer.

65. The process of Claim 64, wherein forming the explosive on the layer of tin is carried out by depositing a powder formed from alternating layers of Ti and B.

66. The process of Claim 65, wherein depositing the alternating layers of Ti and B is carried out by magnetron sputtering.

67. The process of Claim 64, additionally including forming the layer of tin in a cup portion of a primer assembly.

68. In a process for forming a Boxer type cartridge primer including a cup, and explosive mixture, a foil, and an anvil, the improvement comprising:

utilizing an inorganic reactive multilayer material as at least a portion of the explosive mixture.

69. The improvement of Claim 68, additionally including eliminating the foil.

70. The improvement of Claim 68, additionally including utlizing the inorganic reactive multilayer material in a powder form as the explosive mixture.

71. The improvement of Claim 68, additionally including providing the cup with a quantity of tin.

72. The improvement of Claim 68, additionally including providing the inorganic reactive multilayer material in the form of multilayers and multilayer powder as the explosive mixture.

73. The improvement of Claim 68, additionally including forming the inorganic reactive multilayer material from multilayers selected from the group consisting of three element and two element multilayers.

74. The improvement of Claim 68, additionally including providing the cup with a quantity of material that has changes therein at a temperature of about 0 to 50°C including at least one of: a destructive phase change, a thermal contraction change, and an internal stress change.

75. The improvement of Claim 68, additionally including forming the inorganic reactive multilayer material from alternating layers of titanium and boron with a layer thickness of each in the range of 1 to 1000 nm.

76. The improvement of Claim 68, additionally including forming the inorganic reactive multilayer material so that each multilayer is composed of layers of three materials.

77. The improvement of Claim 76, wherein the multilayers of layers of three materials are selected from the group of materials consisting of Ti-Al-CuO, Ti-C-CuO, Be-C-CuO, and Al-C-CuO.

78. The improvement of Claim 77, wherein said inorganic reactive multilayer material is converted to a powder of reactive material.

79. The improvement of Claim 68, additionally including providing the inorganic reactive multilayer material in the form of multilayers of titanium and boron.

80. The improvement of Claim 79, additionally including forming the multilayers of titanium and boron with a layer thickness of 20Å to 100Å each.